

of the routes in the predefined set using at least one predefined criterion, and selecting the route that achieves a highest evaluation.

21. A method as claimed in claim 20 wherein the step of evaluating each of the routes further comprises steps of:

determining a value for each route at least one of a number of sections in the route, a sum of amplifiers in links in the route, a sum of lengths of the sections in the route, and, a sum of cost values associated with each section in the route; and

comparing the determined values of the routes to select a route that receives an optimal value.

22. A method as claimed in claim 21 wherein the step of generating further comprises a step of accounting for at least one of the following considerations: reliability of the route; existence of protection fiber along the route; and a cost of leasing the optical fiber links in the route.

23. A method as claimed in claim 19 wherein the step of selecting the at least one wavelength further comprises steps of:

estimating a number (R) of regeneration points required for the channel;

accessing regeneration opportunity information, to derive a set of regeneration points each of which

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currently having capacity to regenerate the channel on the selected route; and

selecting from among the set of regeneration points a set of R regeneration points that are sufficiently spread out so that distances between successive regeneration points in the route are less than a predefined wavelength span.

24. A method as claimed in claim 23 wherein the step of selecting from among the set further comprises steps of:

generating a plurality of sets of R regeneration points;

evaluating each of the plurality of sets of R regeneration points according to a predetermined criterion; and

selecting the R regeneration points that achieved a highest evaluation among the sets of R regeneration points evaluated.

25. A method as claimed in claim 24 wherein the step of selecting the at least one wavelength further comprises a step of selecting a respective wavelength from amid a set of wavelengths available each link between successive pairs of: A, B, and members of the selected set of R regeneration points.

26. A method as claimed in claim 18 wherein the step of verifying the plausible communications channel, which comprises at least one wavelength, comprises steps of, for each of the at least one wavelength:

parsing the wavelength into links over which it is conveyed;

retrieving parameters of transmission equipment in each of the links that the wavelength is parsed into; and

determining if the transmission over the wavelength is viable.

27. A method as claimed in claim 26 wherein the step of retrieving parameters comprises any one or more of:
- looking up a data repository containing fixed data regarding transmission equipment;
 - looking up a polled data registry to inspect a most recent entry of a polled property of the transmission equipment; and
 - directly accessing the transmission equipment to request a status update.
28. A method as claimed in claim 27 wherein the step of determining comprises steps of:
- ensuring that the at least one wavelength is not currently uses on a link over which it is supposed to span;
 - ensuring that the links in the wavelengths are operating within established parameters; and
 - evaluating the signal transmission viability across each of the at least one wavelength.
29. A method as claimed in claim 28 wherein the step of evaluating further comprises steps of: